

terminal 100 may be any communication device, which allows multimedia message communication, either an individual multimedia communication device or various other communication devices which have the capability of carrying out multimedia message communication, and the corresponding hardware structure, the MMS terminal includes but is not limited to a mobile telephone, a personal digital assistant (PDA) and etc. In general, the MMS terminal 100 comprises a MMS module 110 for carrying out the multimedia user application program on the MMS terminal 100. Through running the multimedia user application program on the MMS terminal 100, the local interaction on the MMS terminal 100 and the interaction between MMS terminal 100 and the server 300 are realized. Preferably, the MMS terminal 100 includes at least four components: a communication module 111, a parser module 112; an interactive module 113, and a storage module 114. Wherein the communication module 111 mainly process various MMS communication protocols so as to communicate with the server 300 via the MMSC 200. The parser module 112 parses the multimedia message received from the server, reads out the information in respect to the message format to be presented on the MMS terminal 100 and the related information, so as to carry out corresponding process on the message of various presentation format. Should, for example the received message format be pictorial a picture information is displayed according to the picture message format; an audio one, an audio message is played; and a textual one, the content of a text is displayed. The interactive module 113 carries out the associated operations corresponding with individual controllers listed in the multimedia message form, according to the relationship between the media objects, which have been parsed from the received multimedia message, to realize the local interaction on the MMS terminal 100 and the interaction between MMS terminal 100 and the server 300. The storage module 114 is used to store the received message and involved process results therewith.

[0037] Now reference is taken to FIG. 4. FIG. 4 schematically shows the interactive procedure for the multimedia message service according to an embodiment of the present invention. Firstly, in procedure 130 the server 300 sends an interactive multimedia message to the MMS terminal 100 via a communication network and a MMSC 200. The message is, for example, sent once and may be permanently stored into the MMS terminal 100.

[0038] In procedure 120, a process of a local interaction on the MMS terminal 100 is shown. The local interaction process is a process that deals mainly with user operations, namely that the user performs operations, including adding, deleting, modifying, entering, selecting, searching and etc., on various forms provided on the user interface. Of course the user can either choose one or more from said operations, or perform none of them.

[0039] Depending on the requirement, an interaction between a MMS terminal and a server is also realizable. In procedure 131, a request message comprising request message inputted or chosen by the user, is sent from MMS terminals 100 to service server. Preferably, a response message with the desired service is sent back (procedure 132) to the server 300.

[0040] Hereafter, the interactive approach for multimedia message service is further explained in details with reference to FIG. 5.

[0041] FIG. 5 schematically shows the flow chart of the procedures of the interactive approach for the multimedia message service of an embodiment of the present invention. The procedure steps illustrated in the flow chart are mainly performed through a MMS module assembly 110 in the above-mentioned MMS terminal 100, that is that the present embodiment is realized through performing the user application program, which runs on the MMS module assembly 110, in the communication module 111, the parser module 112 and the interactive module 113. Of course the description of the embodiment is only given in an illustrative manner, and the present invention is not limited to the structures shown in the accompanying drawings.

[0042] Now reference is taken to FIG. 5. In view of the multimedia message (P1) from the multimedia message server 300, in step F2, the multimedia message is received by the MMS terminal 100 via MMSC200. Firstly, parser module 112 parses the presentation portion (P2) of the message out of the received message data. The presentation portion (P2) is frequently involved in the message content to be presented. Next, in connection with the presentation portion (P2) of the message, the presentation portion is further parsed in step F2, that is, an analysis is carried out in respect of the description about how to display the message. The presentation structure (P3) of the presented message, acquired therefrom, is the related message format to be presented on the MMS terminal. Besides, while parsing of the presentation portion of the message is carried out, the rules of relationship and activities between controllers is parsed and then the relationship and activities are embedded in an action form (P8). Based on the parsed presentation structure (P3), in step F3, a data model (P4) of the presentation message or display message is created according to different message formats, such as a text format, an audio format, or a message format, which is preferably displayed in a Markup language. In view of the created data model (P4) for displaying or playing message, corresponding data are loaded and a message page (P5) is created in step F4. In step F5, the created message page is displayed or played on the MMS terminal 100. In view of the presented multimedia message the user performs operation on it, and in step F6 in response to a user operation an action event (P7) is created. And in step F8, an action listener is used to monitor the action event (P7), the action event is processed and a corresponding action is generated. The action listener is, in step 7, generated based on an action list defined for regulation regulations, resulted from the parsing of the presentation portion performed in step 2. In step 9, in view of the action (P7) monitored in step F8, an event-processing program is activated to process the user's action. The monitored actions are, for example, divided into two kinds, one is to change the contents (P10) on the message page on the MMS terminal. For this kind of action, step F5 is repeated, that is, the action is processed on the basis of the action rules defined in the action list, so as to display or play the changed message page on the MMS terminal 100. The other is involved in the interaction with the service, in step F10, on the basis of the new message model and the related data, if the event is an event involved in message delivery, a message is generated in accordance with the message model and the user's preference and then the generated message is sent to server 300.

[0043] According to an embodiment of the present invention, when the MMS presentation model is created one or